

New Database Helps Decrease 911 Response Times

Customer
Wells County, Indiana and
The Schneider Corporation

Project
911 Mapping Project

Project Date
2004



Having accurate address information in a 911 system can mean the difference between life and death. So, when officials in Wells County, Indiana, realized that their address match rate for mapping incoming emergency calls in their new 911 mapping system was consistently below 25 percent, they knew they had to take action.

Filled with corn, soybean, and wheat fields, Wells County is home to 28,000 residents and is located in northeast Indiana, approximately 200 miles east of Chicago. The county seat is Bluffton, best known for the Wabash River that flows through it, providing a variety of outdoor recreation activities for residents and visitors.

Recognizing the importance of an accurate Geographic Information System (GIS) database, Wells County officials first enlisted the help of The Schneider Corporation, a full-service provider of GIS solutions to municipal, county and state governments, more than eight years ago. The Schneider Corporation helped Wells County develop an enterprise GIS that contained information about county roads, land use, soils, watersheds, and other data, but until recently, the county was lacking consistent and accurate address information for many of its GIS databases.

Not only was an inaccurate address database making it challenging for county employees to contact residents, it created life-threatening challenges for emergency response personnel. When a 911 emergency call is received in the joint city/county dispatch center, a corresponding address appears on the operator's computer monitor, enabling first responders to reach an emergency scene quickly and to find the victim even when an address is not provided by the caller.

Because the county's GIS contained outdated address information, the call mapping software in the dispatch center, which fields incoming 911 calls for all of Wells County, was returning match rates consistently below 25 percent. This meant that three out of every four 911 calls mapped an incorrect address with the telephone number of the incoming call. Because address match rates were so low, first responders had to rely on older paper maps and their own knowledge of the area to locate victims for nearly every emergency call.

The City of Bluffton and Wells County made the development of an accurate address database a top priority and, once again, enlisted the help of The Schneider Corporation. The task at hand was to create an accurate



GIS database that included correct addresses for all county residences, the location and types of structures found at each address, driveway location, street names, and other critical emergency response information.

As a first step, The Schneider Corporation loaded existing orthophoto maps, parcel maps, street information, and tax billing address databases onto handheld Global Positioning System (GPS) receivers to give the field crew an idea of existing structures and possible addresses. With this information in hand, a field crew took to the streets of Wells County to log information for all active addresses in the county—more than 12,000 locations in all.

Over the course of two months, the field crew traveled throughout the 370 square mile region using either the Trimble® Pathfinder® Pocket receiver with a tablet PC or the Trimble GeoXT™ handheld – GPS receiver and computer in one – to verify residential location information. The custom solution from The Schneider Corporation included a laser range finder which, when used in conjunction with the handheld GPS receivers, enabled field workers to capture spatially accurate location information for a structure without having to leave the car.

Each day, the field crew collected address and building information for a specific section of the county, making note of correct addresses and updating inconsistencies in the existing database. In the rural parts of the county, where one parcel of land could consist of a house and several barns and outbuildings, the field team recorded the number of structures on the property, precisely where each was located and which structure appeared to be the main residence.

PROJECT HIGHLIGHTS

- Accurate GIS database with GPS locations helps decrease emergency response times for Wells County, Indiana
- 911 emergency address match rate increased to more than 95 percent accuracy
- Trimble GeoXT is a handheld GPS receiver and computer in one – perfect for field work in a large geographic area



Back in the office, quality control experts confirmed the consistency, completeness and accuracy of the field data, which was uploaded twice daily to The Schneider Corporation's office. Similarly, data about each day's assignment and any sites that should be revisited from the previous day's field work for data confirmation was downloaded once per day by the field crew from the office to the field computers.

The address field verification process was an important component that would ultimately solve the address match rate challenges, as well as provide a standardized address format across all county databases. As part of the verification process, the information collected in the field was checked against the telephone company's Master Street Address Guide (MSAG). The MSAG is a database containing potentially valid addresses for all streets in the county and is used by the 911 dispatch center's equipment to help locate and map incoming calls. If the address information in the 911 mapping system does not match the data in the MSAG, it creates the probability for mislocated or unmapped calls. The Wells County data collected in the field was used to update the MSAG as well as the 911 mapping data.

In just five months, The Schneider Corporation and Wells County completed the entire address mapping project, and with a current GIS and accurate address information, the Wells County's dispatch center now has an address match rate consistently above 95 percent.

In addition to making emergency response times faster, further benefits were realized in other county offices as The Schneider Corporation's solution provides a mechanism to consistently format address data across all county departments. Now, standardized address information can be shared by the county assessor, county auditor, planning office and other departments, ensuring that everyone who needs it has consistent and accurate address information for the residents of Wells County.

The equipment used on this project includes:

- GeoXT handheld
- Trimble Pathfinder Pocket receiver
- ArcPad
- ArcGIS



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